REMARKS

A review of the claims indicates that:

A) Claims 3—14, 17—21, 24—27, 29, 31 and 32 remain in their original form.

B) Claims 1, 2, 15, 22, 28 and 30 are currently amended.

C) Claims 16 and 23 are currently cancelled.

In view of the following remarks, Applicant respectfully requests reconsideration of the rejected claims and withdrawal of the rejections.

Traversal of the §102 Rejections

Claims 1 were rejected under §102(b) as being anticipated by U.S. Patent No. 5,974,150, hereinafter "Kaish." In response, the Applicant submits that the Office has failed to establish a *prima facie* case of anticipation and, in view of the comments below, respectfully traverses the Office's rejections.

Claim 1 recites a method comprising:

- determining randomly distributed features in an object;
- **determining a probability density function associated with the object;**
- compressing data representing the randomly distributed features, **wherein the compressing is based in part on the probability density function;**
- encoding the compressed data with a signature; and
- creating a label comprising the object and the encoded data.

Claim 1 has been amended to recite some of the elements of Claim 2. Both Claims 1 and 2 were rejected using a Section 102 argument based on the Kaish reference. In view of the amendment to Claim 1, the Applicant will address the Section 102 rejection as applied to Claim 2.

The Applicant has amended Claim 1 to recite, "determining a probability density function associated with the object" and "wherein the compressing is based in part on the probability density function". Accordingly, the Applicant teaches a significant increase in compression efficiency than is known in the prior art (as one example only, see the top half of page 18 of the specification).

The Applicant submits that Kaish does not show or disclose, among other things, (1) a probability density function, and (2) basing compression in part on the probability density function. Therefore, the Applicant submits that Kaish does not show or disclose elements recited by Claim 1. Accordingly, the Applicant respectfully requests that the Section 102 rejection of Claim 1 be removed.

Referring to Kaish, at column 28 lines 7—16 (particularly at line 12), a discussion of compression is seen. In particular, Kaish discloses that a plurality of regions can each be associated with a vector in two or more dimensions. Such an association constitutes an irreversible compression of the data derived from that region.

Additionally, Claims 8 and 10 of Kaish disclose the use of compression. Claim 8 discloses compression of a message, while Claim 10 discloses irreversible compression. In these locations, Kaish again fails to show or disclose the use of a probability density function generally, and more specifically, a probability density function associated with compression.

Referring to column 24 lines 34—61 of Kaish, two references to probability are seen. The discussion wherein the references are made is directed to a formula for determining the required power of a laser (column 24, lines 34—38). At line 43, the probability of photon absorption is referred to as A_e. At line 55, the

probability is assigned a value of 0.05, in an effort to determine the laser power level required. Thus, Kaish discusses the probability of photon absorption as related to the power required for the laser. Kaish does not discuss a probability density function related to compression.

The Patent Office, in making out the rejection of Claim 2, suggested that column 15 lines 1—10 show or disclose the probability function recited by Claim 2. The Office also pointed to columns 12 and 18 regarding other aspects recited by Claim 2. The Applicant respectfully disagrees that Kaish shows or discloses a probability density function, and basing compression in part on the probability density function. Accordingly, the Applicant respectfully addresses the cited passages in Kaish.

Referring to column 12 at lines 1—12, Kaish discloses that the fibers embedded in any substrate are embedded randomly, and that the random fibers of one substrate (on one authentication device) have no bearing on any other substrate. Thus, a pattern on a first substrate does not extend to, or affect, a second substrate. Moreover, a code expressing the pattern can be stored in a database. Therefore, a review of the cited passage in Kaish reveals no discussion of probability density functions and their use with compression algorithms.

Referring to column 15 at lines 1—10, Kaish discloses that fibers may be randomly mixed with a carrier material, such as paper pulp, in small enough quantities that they are not overly available to pirates who wish to use them to promote a security breach. However, Kaish does not show or disclose the use of a probability density function, and basing compression in part on the probability density function.

Referring to column 18 at lines 20—27, Kaish discloses receiving a parameter associated with a media/object and encrypting an associated message. However, Kaish does not show or disclose the use of a probability density function, and basing compression in part on the probability density function.

Referring to column 18 at lines 28—35, Kaish discloses a fault tolerant system, wherein different measurements of the media at different times can result in a consistent result within a degree of confidence. However, Kaish does not show or disclose the use of a probability density function, and basing compression in part on the probability density function.

Referring to column 18 at lines 36—45, Kaish discloses vector mapping as a tool to allow mapping of only a portion of an object or media, and to use the portion mapped to obtain a result that is within tolerances to authenticate a medium. However, Kaish does not show or disclose the use of a probability density function, and basing compression in part on the probability density function.

Therefore, a thorough review of Kaish does not show or disclose the use of a probability density function. Moreover, the use of such a probability density function in a compression of data is also not shown. Accordingly, the Applicant respectfully requests that the Section 102 rejection of Claim 1 be removed.

Claims 3—14 depend from Claim 1 and are allowable due to their dependence from an allowable base claim. These claims are also allowable for their own recited features that, in combination with those recited in Claim 1, are not shown and not disclosed in references of record, either singly or in combination with one another.

Claim 15 recites a system comprising:

- an issuer configured to determine randomly distributed features in an authentication object and to compress data representing the randomly distributed features, the issuer being further configured to encode the compressed data with a signature and to create a label that includes the authentication object and the encoded data; and
- **wherein the issuer is further configured to determine a probability density function associated with the authentication object, to determine vectors associated with the randomly distributed attributes based, at least in part, on the probability density function, and to encode a portion of the vectors as a path by applying an arithmetic coding algorithm.**

Claim 15 has been amended to the exact scope of original Claim 16. Because of the amendment, in responding to the Section 102 rejection of Claim 15 the Applicant will address the Section 102 rejection of Claim 16.

The Applicant submits that Claim 15, as amended, is allowable for at least the reasons that Claim 1, as amended, was shown to be allowable, above. Accordingly, the Applicant incorporates the remarks from above at this location.

The Applicant submits that Kaish does not show or disclose, among other things, (1) a probability density function, and (2) basing compression in part on the probability density function. Therefore, the Applicant submits that Kaish does not show or disclose elements recited by Claim 15. Accordingly, the Applicant respectfully requests that the Section 102 rejection of Claim 15 be removed.

Moreover, Kaish does not show or disclose determining "vectors associated with the randomly distributed attributes based, at least in part, on the probability density function," as recited by Claim 15, as amended. As discussed extensively above, Kaish does not show or disclose use of a probability density function to determine vectors.

Therefore, a thorough review of Kaish does not show or disclose the use of a probability density function. Moreover, the use of such a probability density function in a compression of data is also not shown. Accordingly, the Applicant respectfully requests that the Section 102 rejection of Claim 15 be removed.

Claims 17--21 depend from Claim 15 and are allowable due to their dependence from an allowable base claim. These claims are also allowable for their own recited features that, in combination with those recited in Claim 15, are not disclosed by reference of record.

Claims 22 and 28 are allowable for at least the same reasons that Claims 1 and 15 are allowable. In particular, Claims 22 and 28 have been amended to recite the limitations of Claims 23 and 30, respectively. Claims 2, 16, 23 and 30 were collectively rejected by the Office Action using the Section 102 argument based on Kaish. Accordingly, the Applicant incorporates the above remarks at this location. Claims 22 and 28 are also allowable for their own recited features that, in combination with those recited in Claims 1 and 15, are not disclosed by reference of record. The Applicant respectfully requests that the Section 102 rejection of Claims 22 and 28, based on Kaish, be removed.

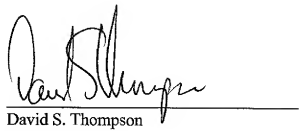
Claims 24—27, 29, 31 and 32 depend from Claims 22 and 28 and are allowable due to their dependence from an allowable base claim. These claims are also allowable for their own recited features that, in combination with those recited in Claims 22 and 28, are not disclosed by reference of record.

Conclusion

The Applicant submits that all of the claims are in condition for allowance and respectfully requests that a Notice of Allowability be issued. If the Office's

next anticipated action is not the issuance of a Notice of Allowability, the Applicant respectfully requests that the undersigned attorney be contacted for the purpose of scheduling an interview.

Respectfully Submitted,

Dated: 9-24-07 By: 

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